Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte TING WANG and MAXIMILIAN OTT

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Appeal No. 2003-1442
Application No. 09/359,037

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HEARD: November 5, 2003

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Before THOMAS, RUGGIERO, and LEVY, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellant has appealed to the Board from the examiner's final rejection of claims 1 through 7, 12 through 17, 22, 39, 40, 42, 44 through 49, 54, 55 and 57.

Representative claim 1 is reproduced below:

1. An optical luminescent display device, comprising:

a luminescent material;

a first energy source which generates a first radiant energy for continuously illuminating said luminescent material without causing said luminescent material to emit visible light; and

a second energy source which generates a second radiant energy for selectively illuminating said luminescent material to thereby control emission of visible light.

The following references are relied on by the examiner:

Storti et al. (Storti)	5,029,253	Jul. 02, 1991
Johnson et al. (Johnson)	5,598,053	Jan. 28, 1997
Okajima et al. (Okajima)	5,700,591	Dec. 23, 1997
DeLuca et al. (DeLuca)	6,031,511	Feb. 29, 2000
		(filed Jun. 10, 1997)

Claims 1 through 7, 22, 39, 40, 44, 47, 54, and 55 stand rejected under 35 U.S.C. § 102(e) as being anticipated by DeLuca. The examiner considers claims 1, 2, 6, 7, 39 and 40 as being anticipated under 35 U.S.C. § 102(b) by Storti. Claims 12, 13, 15 through 17, 42, 45, 48, 49 and 57 stand rejected under 35 U.S.C. § 102(b)as being anticipated by Johnson. This reference is also relied upon by the examiner under 35 U.S.C. § 103 with Okajima to reject claims 14 and 46.

Rather that repeat the positions of the appellants and the examiner, reference is made to the brief and reply brief for

appellants' positions, and the final rejection and answer for the examiner's positions.

OPINION

As set forth below, we sustain the rejections under 35 U.S.C. § 102 of claims 12, 13, 15 through 17, 40, 42, 45, 48, 49 55 and 57. We also sustain the rejection of claims 14 and 46 under 35 U.S.C. § 103. The other claims on appeal not listed here have their rejections reversed.

Turning to the first stated rejection of claims 1 through 7, 22, 39, 40, 44, 47, 54, and 55 as being anticipated by Deluca, we sustain this rejection only as to claims 40 and 55.

Basically, we agree with appellants' arguments presented in the brief and reply brief as to this rejection as to independent claims 1, 22, and 39 since each in some way recites that first radiant energy is continuously used to illuminate the luminescent material. The teaching in the background of Deluca at the bottom of column 1, the use of the switching means 60 in the embodiment shown in Figure 1 and our implicit understanding from the embodiment shown in Figure 2 indicates to us that this reference does not operate in such a manner that the luminescent material is continuously illuminated by the so-called charging energy beams associated with these embodiments. Each of the respective

charging and triggering beams taught in this reference appears to be selectively enabled rather than at least one being continuously enabled. The teaching, for example at the bottom of column 1, indicates that it was known in the art to use a scanning-based system for each of the two types of beams. This is consistent with the switchable shutter option associated with the switching means 60 discussed at the top of column 3, and especially the teaching at column 3, lines 19 through 21. The alternative teaching here also is that activation of an energy beam may be done by selective activation of the power source, which in turn also indicates that there is no continuous supply of the charging beam as required by independent claims 1, 22 and 39 on appeal.

On the other hand, we reach a decision to affirm the rejection of independent claim 40 since this claim merely requires that the supplying of the first radiant energy for charging a luminescent material is not necessarily stated in the claim to be continuously done. Moreover, the fact that the radiant energy may be supplied by a constant source, as set forth at the end of this claim, does not necessarily require that the luminescent material is constantly illuminated with or by the constant source. The teachings of the switching by use of a shutter at column 3, lines 19 through 21 and the teachings of the

admitted prior art at the bottom of column 1 using scanning systems at least clearly indicate that the source of the energy beams is constantly enabled but not necessarily indicating that the luminescent material itself is constantly illuminated.

As to this first stated rejection, we reverse the rejection as to independent claim 1, 22 and 39 as well as their respective dependent claims. On the other hand, we sustain the rejection of independent claim 40 and its respective dependent claim 55, which has not been argued.

We turn now to the second stated rejection of claims 1, 2, 6, 7, 39 and 40 as being anticipated by Storti. Generally, for the reasons set forth by appellants in the brief and reply brief we reverse the rejection of each of these claims and focus now on the recitations of independent claims 1, 39 and 40.

To the extent that Storti indicates that the storage operation may occur, the readout operational functions at the bottom of column 4 beginning at line 47 indicate that the ability of the known luminescent material to store information does not require a continuous illumination of the luminescent material as required by independent claims 1 and 39, and the feature of the constant operational source of radiant energy of independent claim 40 is not indicated as well. On the other hand, to the

extent this portion of the reference indicates that a simultaneous illumination of the blue and infrared beams would be necessary for readout operations, this clearly teaches that the infrared beam does not selectively illuminate or radiate the luminescent material as also required by independent claims 1, 39 and 40 on appeal. The selective supplying of the infrared radiation or second radiant energy of independent claim 40 is also required to be periodically supplied by this claim and not necessarily met by this readout embodiment in Storti.

The additional teaching of the Storti reference that the material may be selectively used to turn off or otherwise quench the emission of visible light from a luminescent material does not teach the requirement of claims 1, 39 and 40 to selectively control the emission of visible light.

Therefore, the examiner's rejection of claims 1, 2, 6, 7, 39 and 40 as being anticipated by Storti under 35 U.S.C. § 102 is reversed.

On the other hand, we sustain the rejection of claims 12, 13, 15 through 17, 42, 45, 48, 49 and 57 as being anticipated by Johnson within 35 U.S.C. § 102(b).

What is most telling about the teaching value of this reference is the discussion beginning at line 16 of column 2 relating to features which are generally known in the art for luminescent materials. It clearly indicates there that it is known in the art that the excitation or charging operations of luminescent materials causing them to emit visible light is known in the art as to the source emitting beam being ultraviolet energy. Correspondingly, the teachings here also indicate that it is known in the art to selectively stimulate or control the decaying process by manipulating the phosphor composition and/or the selective application of radiation of a particular frequency, including infrared as claimed. It is indicated beginning at line 27 that the decay still occurs even though it may be in a non-radiative mode, "the observable effect being the immediate and complete darkening of the phosphor." This is called quenching and it is done by the use of infrared radiation. This an essential feature of independent claims 1, 15 and 42 on appeal. This immediate darkening or quenching is also discussed according to the embodiment at the top of column 4 of this reference.

Besides this discussion of the prior art at column 2 of Johnson, the reference goes into great detail indicating various

methodologies to selectively control or otherwise manipulate the rate of decay or quenching. This is emphasized by the teaching at column 3, lines 21 through 25 where it teaches that by the use of infrared source 114 and LCD array 108 in Figure 1, they emit certain patterns through the lens 116 that impinge the phosphor screen dots 202 in Figure 2 where "each phosphor dot has its response to the electron beam from electron gun 104 independently adjusted by the strength of the modulated decay simulation radiation." The teaching value of Johnson of immediately quenching the visible radiation from a luminescent material by the use of infrared radiation clearly teaches the ceasing to convert requirement of independent claim 12, the ceasing to emit visible light of claim 15 and the feature of a luminescent material not emitting visible light when irradiated by a second energy source of claim 42 on appeal. We thus find unpersuasive appellants' arguments in the brief and reply brief as to this rejection.

Therefore, we sustain the rejections of claims 12, 13, 15 though 17, 42, 45, 48, 49 and 57 under 35 U.S.C. § 102(b) as being anticipated by Johnson. The independent claims depending from independent claims 1, 15 and 42 have not been argued by appellants.

We also sustain the rejection of dependent claims 14 and 46 under 35 U.S.C. § 103 in view of Johnson and Okajima. Appellants' arguments as to this rejection at the bottom of page 14 of the principal brief on appeal do not argue that the references are not properly combinable within 35 U.S.C. § 103 and do not argue against the examiner's views with respect to Okajima. Rather, appellants' arguments focus upon Okajima as not providing the earlier argued deficiencies that appellants set forth with respect to Johnson. Since we have found that Johnson teaches those alleged deficiencies, the rejection of dependent claims 14 and 46 is sustained.

Appellants' grouping of the claims at the top of page 7 of the principal brief on appeal and the substance of the brief and reply brief both indicate that only the independent claims 1, 12, 15, 22, 39, 40 and 42 have been argued by appellants. We have treated each of these separately in each of the separately stated rejections. In view of the foregoing, therefore, we have sustained the rejections of claims 12, 13, 15 through 17, 40, 42, 45, 48, 49, 55 and 57 under 35 U.S.C. § 102, and the rejection of claims 14 and 46 under 35 U.S.C. § 103. As such, the decision of the examiner rejecting the claims on appeal under 35 U.S.C. § 102 and 35 U.S.C. § 103 is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

JAMES D. THOMAS Administrative Patent Judge	)	
JOSEPH F. RUGGIERO Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
STUART S. LEVY Administrative Patent Judge	)	

JDT/vsh

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